PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Barry, et al.

Serial No.: 09/924,128

Filed: August 7, 2001

Group Art Unit: To be Assigned

Examiner: To be Assigned

Docket No.: 062004-1740

For: System and Method for Adaptive Channel Diagonalization for Array-To-Array Wireless Communications

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This information disclosure statement is filed in accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98, and specifically:

☒ under 37 CFR 1.97(b), or
(within Three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)

☐ under 37 CFR 1.97(c) together with either a:
- ☐ Statement Under 37 C.F.R. 1.97(e), or
- ☐ a $180.00 fee under 37 CFR 1.17(p), or

(After the CFR 1.97(b) time period, but before the final office action or notice of allowance, whichever occurs first)

☐ under 37 CFR 1.97(d) together with a:
- ☐ Statement under 37 CFR 1.97(e), and
- ☐ a $180.00 petition fee set forth in 37 CFR 1.17(p).

(Filed after final office action or notice of allowance, whichever occurs first, but before payment of the issue fee)

Enclosed is a check in the amount of $ 00.00 . Please charge $00.00 to deposit account 20-0778. At any time during the pendency of this application, please charge any fees required to Deposit Account 20-0778 pursuant to 37 CFR 1.25. The Commissioner is hereby requested to credit any overpayment to Deposit Account No. 20-0778.

☒ Applicant(s) submit herewith *Form PTO 1449 - Information Disclosure Citation* together with copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may or may not be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56. As required by 37 C.F.R. §1.98(a), a legible copy of each document is provided.

☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on the form PTO 1449 and is enclosed herewith.

The following three references, authored by the applicants and published within the 1- year grace period accorded by 35 U.S.C 102 (b), have been disclosed to fulfill the duty of disclosure required by 37 C.F.R. §§ 1.56. Applicants do not consider these three references to be prior art references under 35 U.S.C. 102 (b).

(1) "A Comparison of Almouti's Scheme to an SVD Scheme For Array-to-Array Communications," September 20, 2001.

(2) "Space-Time Processing with Channel Knowledge at the Transmitter," February 2001.

(3) "Space-Time Processing with Channel Knowledge at the Transmitter," July 2001.

The following two references were authored by the applicants and contain dates one year beyond the August 7, 2001 filing date. Applicants have disclosed these references to fulfill the duty of disclosure required by 37 C.F.R. §§ 1.56. However applicants do not consider the two references to be prior art references under 35 U.S.C. 102 (b).

(1) "A Simple and Adaptive Channel Diagonalizer for Optimal Space-Time Processing," May 1, 2000.

(2) "Apendix C: Space-Time Processing with Channel Knowledge in Array-to-Array Communications," June 9, 2000.

Applicants submit the following case law in the context of printed publications under 35 U.S.C. 102 (b). In *Northern Telecom, Inc. v Datapoint Corp.*, 908 F.2d 931, 15 USPQ 2d 1321 (Fed. Cir. 1990), four (4) reports on a complex military system distributed to approximately 50 persons or organizations involved in a project were considered by the Court to be not so accessible to the public to constitute printed publications. The facts considered by the court to be relevant in its determination include: (1) the reports were distributed to approximately 50 persons or organizations involved in a military project (no security classification), and (2) at least one of the reports were labeled as not authorized for reproduction or further dissemination and not for public release.

In *Baron v Bausch & Lomb, Inc.*, 25 USPQ 2d 1641, 1662 (W.D.N.Y. 1992), "printed publication" is interpreted to mean all material accessible to the public in tangible form. This can mean either a description, drawing, or photograph. However, oral communications and most handwritten communications are excluded from prior art relevant to this consideration.

The reference, "A Simple and Adaptive Channel Diagonalizer for Optimal Space-Time Processing," May 1, 2000, was presented as an overhead to a meeting of 20-30 researchers (students and faculty) involved with Yamacraw projects. Yamacraw is a consortium of companies that sponsor research, and are required to adhere to a set of Intellectual Property bylaws as set forth below. Significantly, especially in light of *Baron v Bausch*, no handout was distributed in this meeting. Further, the applicants presented the material in this reference in a span of approximately 10 minutes. Further, there exists an understanding among the researchers that no information presented is to be made public.

The reference, "Apendix C: Space-Time Processing with Channel Knowledge in Array-to-Array Communications," June 9, 2000, was appended to an annual report provided to a limited audience (*i.e.* Yamacraw sponsors). Below is the section in the Yamacraw by-laws that pertain to their Intellectual Property rights:

During the term of its membership in YRC, Company with Full Membership, and if in good standing, shall be offered a nonexclusive, royalty-free, nontransferable, worldwide license, with no right to sublicense, to use for commercial purposes the Intellectual Property created from the Research Work conducted during the time in which Company is a YRC member to make, have made, market, use and sell commercial products covered under any patent arising from such Research Work and the right to reproduce, make derivative works, display, distribute and otherwise use any such Research work covered by any copyright. Except as set forth in the Research Agreement, all such licenses shall be for a term of five years from the date of the first documented disclosure of the Intellectual Property to the members of YRC, except that in the event that a patent application is filed for any Research Work, the license under such patent shall be for a term of five years from the date the patent application is filed.

If a company elects to license a Yamacraw technology, then a non-disclosure agreement is executed to divulge the enabling technology. All annual reports are distributed to Yamacraw members are marked "Proprietary and Confidential Information."

The following rights are reserved by the Applicant(s): the right to establish the patentability of the claimed invention over any of the listed documents should they be applied as reference, and/or the right to prove that some of these documents may not be prior art, and/or the right to prove that some of these documents may not be enabling for the teachings they purport to offer.

This statement should not be construed as a representation that an exhaustive search has been made, or that information more material to the examination of the present application does not exist. The Examiner is specifically requested not to rely solely on the materials submitted herewith. The Examiner is requested to conduct an independent and thorough review of the documents, and to form independent opinions as to their significance.

It is requested that the information disclosed herein be made of record in this application and that the Examiner initial and return a copy of the enclosed PTO-1449 to indicate the documents have been considered.

Respectfully Submitted,

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.

By: _____

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CERTIFIED MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as **"First Class Mail,"** in an envelope addressed to: Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231 on 10-25-01

Mary Meegan
Signature

Form PTO-1449

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Attorney Docket No.	Serial No.
062004-1740	**09/924,128**
Applicant: **Barry, et al.**	
Filing Date: **8/7/01**	Group: **To be assigned**

U.S. PATENT DOCUMENTS

Examiner Initials	Item	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	A	Brandenburg, et al., "The Bell System Technical Journal", May-June 1974, Pages 745-779.					
	B	Sung, et al., "Apendix C: Space-Time Processing with Channel Knowledge in Array-To-Array Communications", June 9, 2000, Pages 1-6.					
	C	Sung, et al., "Space-Time Processing with Channel Knowledge at the Transmitter", Pages 26-29.					
	D	Sung, et al., "A Comparison of Alamouti's Scheme to an SVD Scheme for Array-To-Array Communications", September 20, 2001, Pages 1-6.					
	E	Sung, et al., "A Simple and Adaptive Channel Diagonalizer for Optimal Space-Time Processing", May 1, 2001, Pages 0-5.					
	F	Sung, et al., "Optimal Space-Time Processing for Array-to-Array Communications", November 2, 1999, Pages 0-8.					
	G	Sung, et al., "Space-Time Technique Based on the SVD for Broad-Band Communications", April 25, 2001, Pages 0-8.					
	H	Causey, et al., "Blind Multiuser Detection Using Linear Predication", December 1998, Pages 1702-1710.					
	I	Reial, et al., "Capacity-Maximizing Transmitter Processing for Fading Matrix Channels", Pages 6-10.					
	J	Tarokh, et al., "Space-Time Block Codes from Orthogonal Designs", July 1999, Pages 1456-1467.					
	K	Gerald J. Foschini, "Layered Space-Time Architecture for Wireless Communication in a Fading Environment When Using Multi-Element Antennas", Autumn 1996, Pages 41-59.					

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

EXAMINER'S SIGNATURE:	DATE CONSIDERED:

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	L	Tarokh, et al., "Space-Time Codes for High Data Rate Wireless Communication: Performance Criterion and Code Construction", March 1998, Pages 744-765.					
	M	Raleigh, et al., "Spatio-Temporal Coding for Wireless Communication", March 1998, Pages 357-366.					
	N	Siavash M. Alamouti, "A Simple Transmit Diversity Technique for Wireless Communications", October 1998, Pages 1451-1458					
	O	Ng, et al., "Complex Optimal Sequences with Constant Magnitude for Fast Channel Estimation Initialization", March 1998, Pages 305-308.					
	P	Tufvesson, et al., "Time and Frequency Synchronization for OFDM using PN-Sequence Preambles", Pages 2203-2207.					
	Q	Mody, et al., "Parameter Estimation for OFDM with Transmit Receive Diversity", Pages 820-824.					
	R	Berrou, et al., "Near Shannon Limit Error - Correcting Coding and Decoding: Turbo-Codes (1)", Pages 1064 - 1070.					
	S	MacKay, et al., "Near Shannon Limit Performance of Low Density Parity Check Codes", August 1996, Pages 1645 - 1646.					
	T	David J C. MacKay, "Good Error-Correcting Codes Based on Vary Sparse Matrices", March 1999, Pages 399 - 431.					
	U	Dent, et al., "Jakes Fading Model Revisited", June 1993, Pages 1162-1163.					
	V	Stuber, et al., "Terrestrial Digital Video Broadcasting for Mobile Reception Using OFDM", Pages 2049-2053.					

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	W	Li, et al., "Channel Estimation for OFDM Systems with Transmitter Diversity in Mobile Wireless Channels", March 1999, Pages 461-471.					
	X	Hochwald, et al., "Unitary Space-Time Modulation for Multiple-Antenna Communications in Rayleight Flat Fading", March 2000, Pages 543-564.					
	Y	Suehiro, et al., "Modulatable Orthogonal Sequences and their Application to SSMA Systems", January 1988, Pages 93-100.					
	Z	Schmidl, et al., "Robust Frequency and Timing Synchronization for OFDM", December 1997, Pages 1613-1621.					
	aa	Barry, et al., "Yamacraw Wireless Prototyping Air Interface Group Annual Report".					
	bb	Richard Todd Causey, "Blind Multisuer Detection Based on Second-Order Statistics", July 30, 1999, Pages 1-239.					
	cc						
	dd						
	ee						
	ff						
	gg						

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